

## Porting and optimizing

### for AMD Opteron™ and AMD Athlon™ 64 processors

Whether you are developing for Linux or Windows® operating systems or applications, AMD has forged strong relationships with key industry tool vendors in an effort to develop a wide spectrum of support to the development community. These tools are designed to help programmers reduce development time and solve complex computing problems while perfecting code and protecting your product investment. In addition, these tools should take full advantage of the significant benefits of the AMD64 Instruction Set Architecture (the foundation of the AMD Opteron™ and AMD Athlon™ 64 processors), such as:

- An extended flat address space allowing programs to address memory beyond 4GB
- Native 32-bit x86 compatibility enabling 64-bit and 32-bit applications to run on a 64-bit operating system
- Support for 16 GPRs and 16 XMM registers—double the number of registers present in the 32-bit x86 instruction set
- The ease of porting software from 32-bit to 64-bit systems

To help you find the right development tool for your software application, this guide lists the products supporting the AMD Opteron and AMD Athlon 64 processors. For additional developer information, visit <http://developer.amd.com>.

#### Compilers

GNU 3.2 C & C++ (g++) & Fortran77 (g77) & Java (gcj) GNU glibc 2.2.5	C & C++ compilers. Available in the SuSE Linux Enterprise Server for AMD64 <a href="ftp://ftp.suse.com/pub/suse/x86-64/supplementary/GCC/">ftp://ftp.suse.com/pub/suse/x86-64/supplementary/GCC/</a> <a href="ftp://ftp.suse.com/pub/suse/x86-64/supplementary/GLIBC">ftp://ftp.suse.com/pub/suse/x86-64/supplementary/GLIBC</a>	32-bit Linux 64-bit Linux
GNU 3.3 C & C++ (g++) GNU glibc 2.3.1	C & C++ compilers. Optimized C compiler. Available in the SuSE Linux Enterprise Server for AMD64. <a href="ftp://ftp.suse.com/pub/suse/x86-64/supplementary/GCC+Glibc-Perf/">ftp://ftp.suse.com/pub/suse/x86-64/supplementary/GCC+Glibc-Perf/</a>	64-bit Linux
PGI Workstation 5.0	FORTRAN 77/90, C, C++ compilers Commercial release available June 2003 Download beta at: <a href="http://www.pgroup.com/AMD64">www.pgroup.com/AMD64</a>	32-bit Linux 64-bit Linux 32-bit Windows
PGI CDK 5.0	FORTRAN 77/90, C, C++ compilers, profilers & debuggers (available July 2003)	32-bit Linux 64-bit Linux
Microsoft® Visual Studio.NET	Visual BASIC, C, C++ compilers <a href="http://www.microsoft.com">www.microsoft.com</a>	32-bit Windows 64-bit Windows (beta)
Absoft FORTRAN64	FORTRAN 77/95 & C compilers Graphical debugger & libraries <a href="mailto:opteronbeta@absoft.com">opteronbeta@absoft.com</a> (availability expected 2H03) <a href="http://www.absoft.com">www.absoft.com</a>	32-bit Linux 64-bit Linux 32-bit Windows
NAGWare f95	FORTRAN 77/95 <a href="http://www.nag.com/f95AMD">www.nag.com/f95AMD</a>	32-bit Linux 64-bit Linux

#### Performance Libraries

AMD Core Math Library 0.9 Beta	Highly optimized numeric libraries Includes: BLAS Levels 1, 2, 3, FFT's, LAPACK <a href="http://developer.amd.com">http://developer.amd.com</a>	32-bit Linux 64-bit Linux
ATLAS	Automatically Tuned Linear Algebra Subroutines Optimized BLAS routines <a href="http://math-atlas.sourceforge.net">http://math-atlas.sourceforge.net</a>	32-bit Linux 64-bit Linux 32-bit Windows
Numeric Algorithms Group	Optimized math libraries in FORTRAN 77/90 & C <a href="http://www.nag.co.uk">www.nag.co.uk</a>	32-bit Linux 64-bit Linux

## Performance Analyzers

AMD CodeAnalyst 2.1 Beta	Time-based & event-based profiling; execution pipeline simulation. <b>http://developer.amd.com</b>	32-bit Windows 64-bit Windows (beta)
Oprofile	Available with SuSE Linux Enterprise Server for AMD64 distribution <b>http://oprofile.sourceforge.net/</b>	32-bit Linux 64-bit Linux
Pallas Vampir & Vampirtrace	MPI tracing <b>www.pallas.com</b>	32-bit Linux

## Debuggers

Microsoft Debuggers	Microsoft Kernel and Microsoft Windows debuggers <b>http://msdn.microsoft.com</b>	32-bit Windows 64-bit Windows (beta)
Compuware SoftICE	Debugger for Windows device drivers <b>www.compuware.com</b> For beta information email: sheryl.skidmore@compuware.com	32-bit Windows 64-bit Windows (beta)
GDB	GNU debugger <b>www.gnu.org</b>	32-bit Linux 64-bit Linux
Streamline Computing	Distributed Debugger Tool (DDT) Graphical software debugger <b>www.streamline-computing.com</b>	32-bit Linux 64-bit Linux
Etnus TotalView	Distributed debugger <b>www.etnus.com</b>	32-bit Linux

## Clustering

MPICH	Functions for XII window system graphics and event logging, upshot, and nupshot performance visualization tools <b>www-unix.mcs.anl.gov/mpi/mpich</b>	32-bit Linux 64-bit Linux
Scyld Beowulf Cluster Operating System	Advanced clustering operating system and utilities <b>www.scyld.com</b>	32-bit Linux 64-bit Linux

## Code Migration

MigraTEC 64Express	Automated source code migration to 64-bit <b>www.migratec.com</b>	32-bit Linux 64-bit Linux 32-bit Windows 64-bit Windows
MigraTEC 32Direct	Cross-platform migration <b>www.migratec.com</b>	32-bit Linux 64-bit Linux 32-bit Windows 64-bit Windows

### About AMD

AMD is a global supplier of integrated circuits for the personal and networked computer and communications markets with manufacturing facilities in the United States, Europe, Japan, and Asia.

AMD produces micro-processors, Flash memory devices, and support circuitry for communications and networking applications. The company was founded in 1969 and is based in Sunnyvale, California. (NYSE: AMD)



**www.amd.com**

One AMD Place  
P.O. Box 3453,  
Sunnyvale, CA 94088-3453, USA  
Tel: 408-732-2400 or 800-538-8450  
TWX: 910-339-9280  
TELEX: 34-6306



RECYCLED &  
RECYCLABLE

Printed in the USA 3020IB-US

### Technical Support

**USA & Canada:** 800-222-9323 or 408-749-5703  
**USA & Canada PC Microprocessor:**  
408-749-3060  
**USA & Canada Email:** hw.support@amd.com

**Latin America Email:**  
latinamerica.support@amd.com

**Europe & UK: +44-0-1276-803299**

**Fax:** +44-0-1276-803298

France: 0800-908-621

Germany: +49-89-450-53199

Italy: 800-877224

**Europe Email:** euro.tech@amd.com

**Far East Fax:** 852-2956-3996

**Japan Fax:** 81-3-3346-7848

### Literature Ordering

**On the Web:** [www.amd.com/support/literature.html](http://www.amd.com/support/literature.html)  
**USA & Canada:** 800-222-9323

**Europe Email:** euro.lit@amd.com

**Far East Fax:** 852-2956-0588

**Japan Fax:** 03-3346-9628

© 2003 Advanced Micro Devices. All rights reserved. AMD, the AMD Arrow logo, AMD Athlon, AMD Opteron, and combinations thereof are trademarks of Advanced Micro Devices. Microsoft and Windows are trademarks of Microsoft Corporation. Other product and company names used in this publication are for identification purposes only and may be trademarks of their respective companies.